Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 85 (2013) 432 – 442

Procedia
Social and Behavioral Sciences

AcE-Bs 2013 Hanoi
ASEAN Conference on Environment-Behaviour Studies
Hanoi Architectural University, Hanoi, Vietnam, 19-22 March 2013
"Cultural Sustainability in the Built and Natural Environment"

Sustainable Empowerment Models for Rural Pastoral Communities in Kenya

Reiko Hishiyama*

Faculty of Science and Engineering, Waseda University
3-4-1 Okubo, Shinjuku-ku, Tokyo 169-8555, Japan

Abstract

This paper presents a model sustainable empowerment system for rural communities in developing countries to improve the socioeconomic situation and provide education to support knowledge warriors. This model acts as a bridge between the needs of communities and the operations of International NPO/NGO. To justify the model, participatory field studies were conducted at a local non-profit organization in Kenya. My research revealed the following: 1) In successful projects, the efficiency of limited local resources, such as people and goods, is maximized. 2) The process of community training or awareness is the most influential key in maintaining a sustainable empowerment system.

Keywords: Non-profit organization; sustainability; empowerment system; Kenya

1. Introduction

International NPOs/NGOs or social entrepreneurs, represented by a for-profit or non-profit organization play a significant role in resolving the social, environmental, and economic issues facing developing countries. Their common support measures are to supply relief goods to poor rural areas in countries when they start to carry out their programs. However, these distributions often remain untouched after the supply operations, and distributions do not always lead to *sustainable empowerment support* for the people, including young people and women in rural poor communities. To this end, we

* Corresponding author. Tel.: +81-3-5286-2507; Fax: +81-3-5286-3486.
E-mail address: reiko@waseda.jp.

doi:10.1016/j.sbspro.2013.08.372

indicate the key problems with designing a sustainable empowerment system for the communities. This paper presents a model sustainable empowerment system for poor rural communities in developing countries to improve their socioeconomic situation, provide education to support knowledge warriors, and to improve their quality of life. This paper is organized as follows. Section 2 introduces related works. Section 3 gives an analysis of an empowerment workflow for the communities. Sections 4 describes the field studies to evaluate successful workflow, and the results of the studies. Section 5 then integrates the findings of the field studies into the model. Section 6 shows a simple simulation to predict the effectiveness of the empowerment model before applying the model to other new communities. Finally, Section 7 presents conclusions.

2. Related works

Social activities or operations are commonly structured as for-profit or non-profit organizations (SDfA-Kenya, 2012). NPOs/NGOs are the main actors represented by non-profit organizations. Regardless of whether the activities are organized as for-profit or non-profit, the social activities or operations have the characteristics of co-operative or charity programs. As a business that has developed over the last few years, social entrepreneurship has also been become popular. This involves managing social ventures to achieve the desired social change under entrepreneurial principles, which involves empowering communities in developing countries. At present, the main world of the social entrepreneur is the voluntary sector (Thompson, 2002). From the viewpoint of the empowerment theory, the Double X Economy, which is proposed by (Scott, 2012b), is an empowerment model for women. This provides the conceptual framework for social activities or social business to encourage social change. Based on this model, pilot projects have been conducted in Africa and Asia (Dolan, 2012; Scott, 2012a). She addresses the importance of the participation of women in all aspects of the economy, and how their behavior should become interconnected across domains and national boundaries. The UN Millennium development goals point out the importance of education and child health (Cynthia 2007; Cynthia 2012). Taking a broader view of the concept of empowerment, we will be able to encourage the participation, not only of women but also of young and disabled people. Generality of the empowerment model is needed for for-profit or non-profit organizations to create a sustainable and efficient social system.

3. Sustainable empowerment workflow for NPO/NGO operations

My research motivation is to model a sustainable empowerment system for poor rural communities. We see a very close link between the sustainability empowerment system and operational support project workflow by NPO/NGO. Typical project workflows are shown in Fig.1(a) and (b). Fig 1(a) shows a generalized project workflow of an initial stage of the NPO/NGO's project. Fig. 1(b) shows a project workflow of the successful stage after the project, which is embedded in the local communities. The workflow of Fig.1(a) requires intermittent resource allocation from outside the communities. These resource loadings play a role as a precondition for the communities' sustainability. In other words, the workflow of Fig.1(a) works under the assumption of continuous resource support. At the initial stage of the project, the community depends on NPO/NGO's support as a distributive function for their living.

The problem with Fig.1(a) workflow is that the situation will revert back to the previous phase over time if the NPO/NGO shut off their support project. As noted before, these resource loadings are a precondition to the communities' sustainability, as shown in Fig.1(a). Once the resource loadings are shut off, the model fails because the prerequisite is not fulfilled. Thus, the NPO/NGO support project should be designed to move from Fig.1(a) to Fig.1(b) workflow.

Fig. 1(b) shows the self-independent model, which no longer needs the continuous resources allocation from outside the communities. The communities can yield an economic benefit under a well-designed plan by the NPO/NGO. The model should also be beneficial not only for local communities but also for the for-profit or non-profit organizations that hope to achieve their desired social contributions. Additionally, to generate a win-win situation for both NPO/NGOs' organizations and local communities, it is important to promote the creation of socioeconomic benefit by establishing a business model that brings profit. This model should generate as rising benefit the "Scatter with one hand, gather with two," from their autonomous closed economic cycle in local communities.

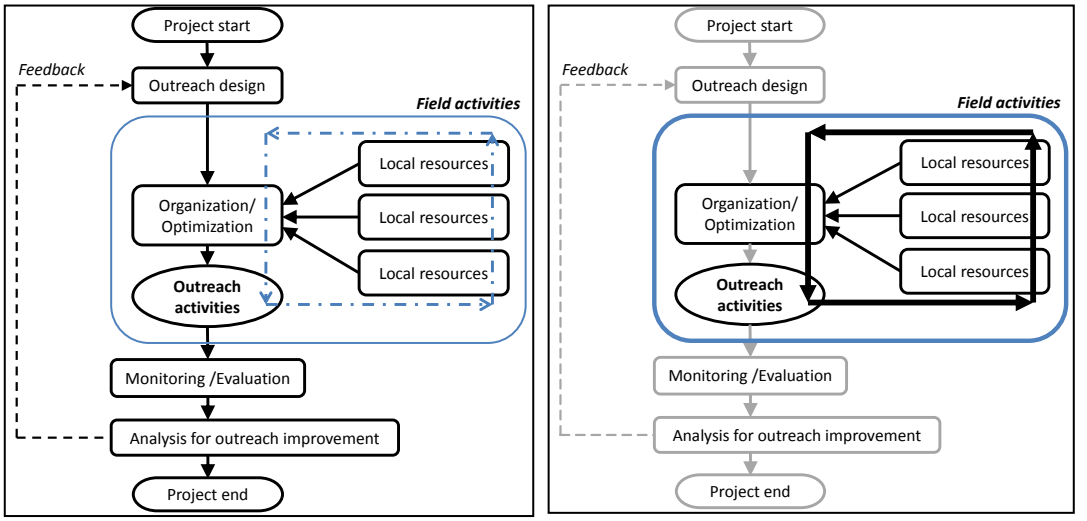

Fig. 1. (a) A generalized workflow at the initial stage of the NPO/NGO's project; (b) A project workflow at the successful stage

4. Observations as case study

The previous section mentions the support project workflow by the NPO/NGO. Related to the workflow, a theoretical empowerment model should be designed under a theoretical perspective of a sustainable model to better establish the NPOs/NGOs' programs. To design and justify the model, field studies were conducted at a local non-profit organization, which conducts superior operations in Kenya. This section introduces the research method adopted by this research and describes the study regions as field observations.

4.1. Research methodology

In this research, a participatory field study method is conducted with EBS explanatory theory as a research methodology. The EBS theory is a coherent set of explanations answering the why behind observable phenomena (Panitchpakdi, 2012). It serves to give meaning to and explain the pattern of observables seen in the world. EBS theory is used to investigate reciprocal interactions among places, user groups, socio-behavioral-cultural phenomena and time (Moore, 2006; Panitchpakdi, 2012). On this point, the theory can be widely applied not only for the architecture & urban planning but also the understanding of the behavioral, social and cultural factors as social and political sciences in relation to the entire designed and built environment. In contrast, the field studies including participatory field

studies are beneficial to understanding the problems in the field (Ishida, 2012). The collection of information outside of a laboratory or library is often characterized not only as qualitative research but also quantitative research. Thus, the field studies were planned to be used to provide the explanatory meanings under the EBS explanatory theory. In particular, in this research, the places are applied to the rural areas in Kenya, the user groups are applied to the pastoral communities, the social-behavioral-cultural phenomena and time are applied to the pastoral communities' original cultural tradition, which are, for example, women's or shepherd children's unique role in their families. The observables interaction is founded by the participatory field studies, and serious attention is paid to the role of the behavioral, social and cultural factors by the EBS theory. This research contributes to understanding of the social political economic contextual issues and to improving the quality of life through social design and planning.The research was conducted in March of 2012. The base office for this research is situated in Nairobi, which is the capital city of Kenya. The field studies focused on rural villages with local NPOs' staff.

4.2. Partner organizations of the field research: SDfA-Kenya

The research partner is Sustainable Development for All-Kenya (SDfA-Kenya), which is a non-partisan, non-governmental organization that works with poor families in Kenya and other African Countries to bring lasting change to social-economic problems. They started their operations in May 2005, as an informal group. The organization started with three members, who had a vision of using the little resources they had to initiate sustainable projects in society. The organization was registered as a non-governmental organization under the NGO's act in June 2007, by the NGOs coordination board (SDfA-Kenya, 2012). They observe, identify, and research key problems affecting a specific community and then engage the community in developing local solutions to these problems. They then mobilize resources and thereafter implement the identified solution, in conjunction with the community and other partners.Their main project is the 'Use Solar, Save Lives' program. It was founded by Mr. Evans Wadongo, who is the executive director of SDfA-Kenya, in 2004 with the aim of improving livelihoods and education in areas without electricity, by providing households with solar energy. Evans used part of his student loan to set up the program, due to his experience growing up in a rural home in western Kenya, where he studied using tin kerosene lanterns, called 'Koroboi.' The project involves the design, production and distribution of solar powered LED lanterns dubbed "MwangaBora" to especially poor rural households without electricity; and helping communities set up economic ventures from their savings on kerosene. The program will further provide solar powered water and irrigation systems in future. The program is improving education and health, reducing carbon emissions and reducing poverty. By December 2010, they had distributed over 14,000 lanterns, and helped set up over 10 economic ventures in poor communities. Their lanterns can hold three recycled batteries. These are charged via the solar panels on the top of the lantern. The bulb of the lantern is made by hand in the small "Ju-akari" workshop in downtown Nairobi. SDfA-Kenya orders the bulbs from the workshop, and NPO's volunteer staff finishes making the lanterns using the delivered bulbs. Their order of bulbs provides a source of income for small workshop businesses. At the start of the field research, two main research fields were selected from the viewpoint of the design and evaluation of the empowerment model. During the field research, we visited their two service outreach fields: One is a shepherd school of the Samburu tribe village near Maralal town in northern Kenya, and the other is a small rural village near Nairobi where economic ventures are set up by women. The selected fields play a crucial role in terms of community training or awareness in the communities. SDfA-Kenya's staff has been conducting well-designed service outreach in these two fields.

4.3. The results of field studies

The aims of the field research are as follows. The first aim is to observe SDfA-Kenya's main project: delivery of the "MwangaBora" solar powered lanterns and how they make and deliver their lanterns. This aim is related to the outline in Fig.1 workflow, which is described in Section 3. The second aim is how to train the people in the community and move to sustainable empowerment workflow, which is illustrated in the transformation from Fig.1(a) to Fig.1(b) in Section 3. For the former subject, a service delivery project that targets the shepherd primary school is selected as Field (a). For the latter subject, the community training project for female communities in an outlying village in southern Nairobi is selected as Field (b).

4.3.1. Field (a): Service delivery for empowerment of young student in shepherd school

The first field for my study is the shepherd primary school, where the solar powered lanterns delivery program is conducted for night school (night school for children who work as shepherds and take care of the livestock in the daytime). The second field is a small business start-up project to empower women in poor communities. The following is an overview of a tribe in the village of Samburu. The Samburu tribe are a pastoral people who follow a traditional nomadic lifestyle. The children of the tribe usually manage their livestock in the daytime, do not go to school and are brought up in a pastoral family culture with tribal traditions. The children work not only for the reason of economics but also for the reason of their culture. To achieve universal primary education, the Kenyan education commission provides the opportunity to receive education at night time for shepherd children. Separately from the daytime school, the night school has two classes from around 6:00 PM to 9:00 PM, in line with the time that the child shepherds finish their work. There are two women teachers who work at night time. For night class students, the school serves the traditional meal "Ugari." This has the positive effect of motivating the students to attend. There are two classes, and a total of 76 people with the youngest child aged 6 and the oldest 17, study different subjects at varying levels depending on their ability. Teachers have been teaching in English and Kiswahili, but as new students can only understand the tribal language "Samburu" the teacher also uses the tribal language in the lower-level class. SDfA-Kenya's project mission is to deliver solar powered lanterns to the night school and their homes. If there are no lanterns, it is difficult for night school students to study because there are only two small overhead solar-powered light bulbs and it is too dark to study in the classroom. For this reason, lanterns are necessary to achieve the education service for night school. The lanterns are also needed at the children's homes so that they can study after school. In this village, kerosene lamps had been used at home. The smoke from the burning kerosene poses a serious health risk to the people and they had been suffering health problems. The solar lanterns resolved this problem. Additionally, the parents could save the money they spent on kerosene and either save the money or spend it on their child's education, resulting in improved quality of life and education.

4.3.2. Field (b): Service delivery for empowerment of women in rural village

The following is an overview of the second village. The people in this village are also pastoral and follow a nomadic lifestyle. However, the women in communities are interested in starting small businesses to improve their economic situation because the village is near Nairobi (about two hours by car from the village to downtown Nairobi). This village had also used kerosene lamps and the people had also suffered health problems. The solar lanterns provided by SDfA-Kenya resolved this problem. Recently, electricity has been provided in this village. But the people do not use the electricity because they have to pay money to use it. Now that they do not have to spend money on kerosene, they can save money. On the female community leader's initiative, women collect the savings from each family and the

collected money is used to cover major expenditures, for example, specific home improvements or buying a house. They also started to use a microfinance system at a bank and obtained a small loan. Thus, they could start their small businesses. In this village, the women make small handmade craft products as souvenirs. They could perform this work at night under a solar powered lamp. One of the main characteristics of this village project is providing education to women. The NPO/NGO staff provided the training on how to handle their household accounts. They teach that keeping an account of expenses is a good way to save money. They suggested saving money and starting a small business to earn more money. The sustainability lead to the design of an economic system adapted to the characteristics of this village and its people. This achieves the synthesizing of service delivery.

Fig. 2. Housekeeping notebook which is written by women in community. Local SDfA-Kenya staff teach women how to keep the housekeeping book

The project staff tends to focus on what to deliver and how to do it. This successful field project shows us that "re-design" is important in developing countries. Re-design of the economic system or social system should be managed in combination with community training. In the case of SDfA-Kenya, the training on bookkeeping enabled sustainable development. As a result of the training, the women in the communities could keep detailed accounts. Fig. 2 shows their accounting book. The second row in Fig.2 shows the name of the family and after the third row is the amount of money. The top of each column is the expenditure. With this bookkeeping, they were able to keep track of their finances.

5. Discussion

This research provides a theoretical perspective of a sustainable model to better establish the NPOs/NGOs' programs. Fig. 3 shows a generalized empowerment design model for rural poor communities. The model should act as a bridge between the needs of communities and NPO/NGO's operations. SDfA-Kenya's operation process is in the form of a cyclic incremental empowerment model as shown as Fig.3.

Fig. 3. Service outreach process

In the field studies, they try to re-design the social system on limited resources, and then they lead a sustainable empowerment system for the communities to improve the socioeconomic situation, and provide education. Additionally, the community training or awareness functions as a source of sustainability. These educational activities are conducted at the same time that they deliver their services, at an early stage. In summary, my research revealed the following:

- In successful projects, the efficiency of limited local resources, such as the people and goods, is maximized.
- The process of community training or community awareness is the most influential key in creating and maintaining a sustainable empowerment system.

Moreover, successful designs adapt to existing conditions (Smith, 2011). In other words, the NPOs/NGOs programs should adapt to the existing conditions of each community. For example, in other villages, bee keeping or growing vegetables are planned as new businesses. Economic ventures are the key to enabling poor people to escape from their poverty and gain the opportunity to receive education. The concept of "designing with the people in the community" leads to a solution that is adapted to the characteristics of the communities. The NPOs/NGOs programs should take into account the characteristics of communities when the programs are designed.

6. Dominant approach for future empowerment program design

As a dominant approach, designing and creation of an economically empowering system is essential for the success of programs in poor rural communities. To predict whether a newly designed program would show the anticipated efficacy, we propose conducting participatory simulations by computer. The effectiveness of the economic process in communities can be studied through the perspectives of the simulation results. As a contribution of this paper, we present a sample participatory simulation to estimate the efficiency and effectiveness before starting a new program.

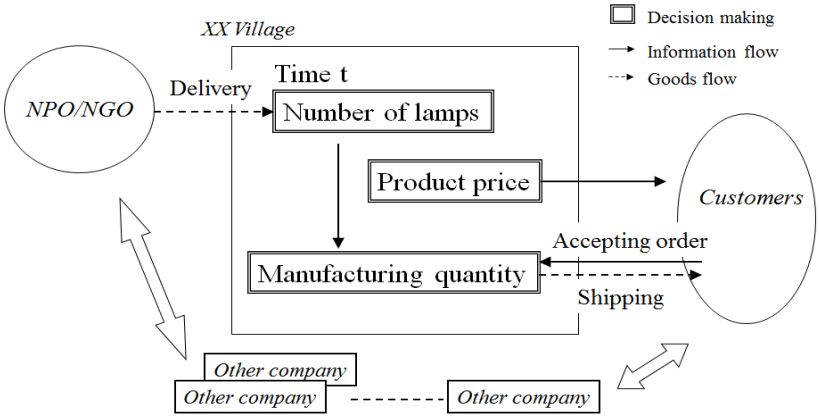

Fig. 4. (a) A conceptual model of the solar lantern project

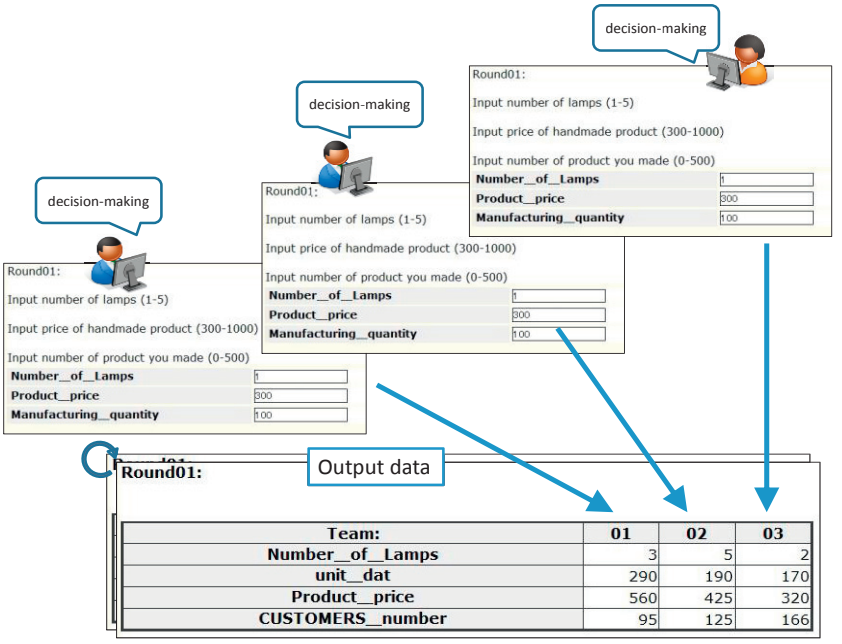

Fig. 4. (b) A user interface process dependency diagram

Fig. 4(a) shows a conceptual model of the solar lantern project. The brief virtual scenario of this model is as follows. Several solar powered lamps will be introduced in a village and each participant is available to start a small business of making handmade products under the lamp at night. They play a role as a virtual village chief and make three decisions: The number of solar lamps, manufacturing quantity, and price of their products. After making these decisions, they accept the orders and ship their products. The simulation was conducted as a mock test, where three university students were invited as participants. Fig. 4(b) shows the user interface process dependency diagram. After three participants input each decision, the model calculation shown in Fig.4(a) is executed and the result is output. The simulation consists of eight rounds, a total of eight decisions made by each participant. Fig. 5(a), Fig.5(b) and Fig.5(c) show characteristic results of this simulation. Fig. 5(a) shows the accumulated sales amount. Each participant successfully increases the sales amount. Fig. 5(b) shows the number or lamps that the participants introduced. The number of lamps increases with the progression of the simulation. “Team 1” found that the installation of the lamps is effective in saving money during the simulation. Fig. 5(c) shows the effect of saving money. The participants found that if they installed solar lamps at their own village and make the products, they could save the money because there would be no need to buy kerosene. This participatory simulation has the potential to become effective not only for predicting the behavior of a newly designed social system but also for the community training or awareness method.

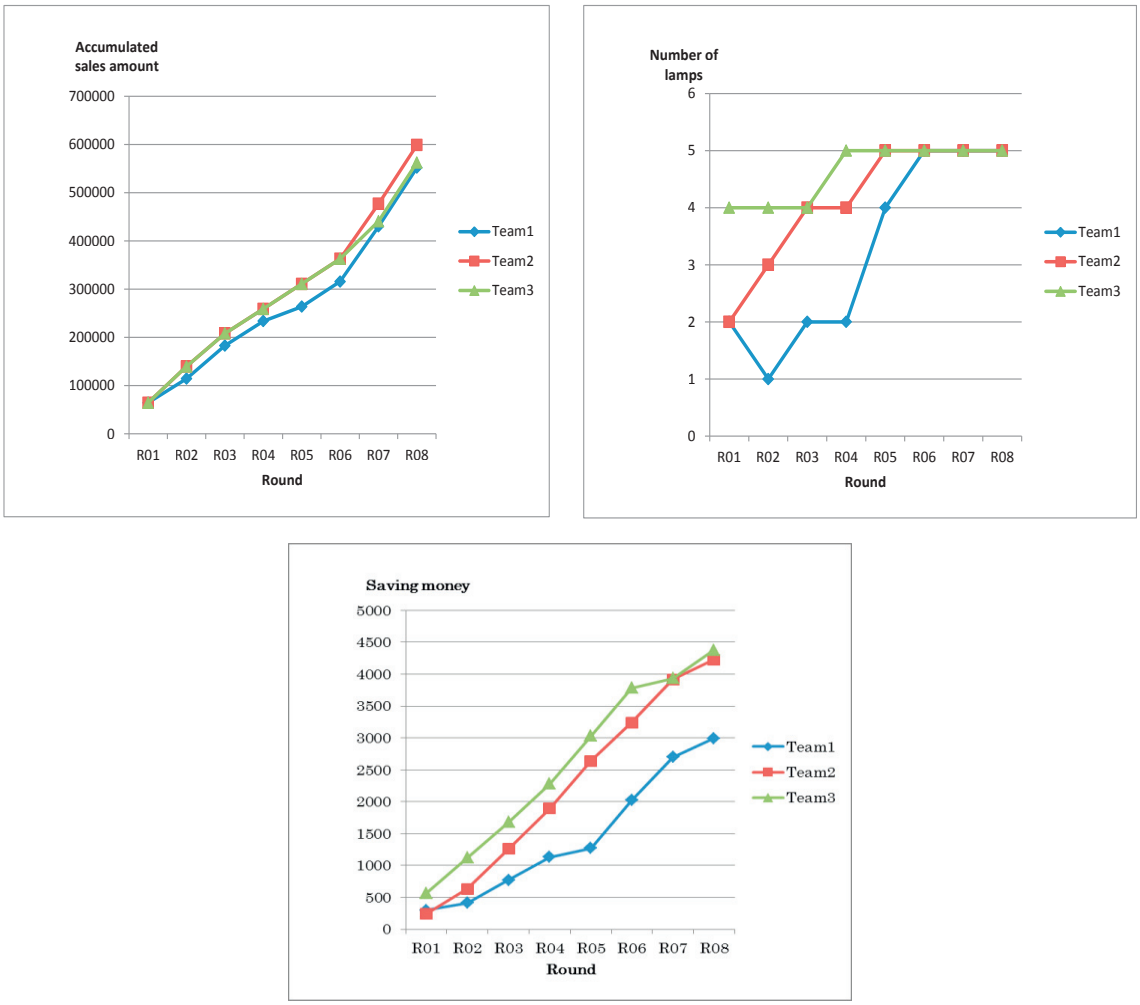

Fig. 5. Simulation results; (a) (upper left) Accumulated sales amount; (b) (upper right) Number of solar powered lamps; (c) (lower left) Saving money

7. Conclusion

In this paper, an empowerment model for poor rural communities was proposed and evaluated by the field studies with EBS theory. To design and evaluate the model, two participatory field researches were conducted with local non-profit organizations in Kenya. The findings are that the efficiency of the limited local resources, such as people and goods, should be maximized in well-designed successful projects. In addition, community training and community awareness is the key to moving from simple resource allocation workflow to sustainable empowerment workflow. The integration of the field studies and EBS theory was referred to as the research design in this paper. Another contribution of this research using this research method was that these research steps presented the rural pastoral communities' behavioral, socio economic original culture, for example, the role of the children who work as shepherds. To achieve sustainable cultural preservation and improve the quality of life and economic situation, the self-

independent socio economic model should be designed by the NPO/NGO with serious attention paid to behavioral, social and cultural factors. As a future work, the whole design process including participatory simulation should be developed and this process evaluated in the field. Additionally, an economic evaluation model for adaptive solution should be developed.

Acknowledgements

This work was supported by the Service Science, Solutions and Foundation Integrated Research Program in the Research Institute of Science and Technology for Society, Japan Science and Technology Agency (JST / RISTEX) and Waseda University Grant for Special Research Projects. I also thank Mr. Evans Wadongo, who is the Executive Director of SDfA-Kenya for providing his advice, help and shared experiences in conducting this research.

References

Dolan, C., Johnstone-Louis, M. and Scott, L. (2012). Shampoo, Saris, and Sim Cards: Seeking entrepreneurial futures at the bottom of the pyramid. *Gender and Development*, 20(1), 33-47.

Ishida, T. & Kyoto University Field Informatics Research Group.(2012). Field Informatics(1st ed.). Springer Heidelberg, New York Dordrecht London.

Moore, T.G.(2004). Environment, behaviour and society: A brief look at the field and some current EBS research from the University of Sydney. In Y. Yuan (Ed.), Spatial Environments Agreeable for Human Beings: *Proceedings of the 6th International Symposium for Environment-Behavior Studies*, 489-506. (Invited keynote speaker in refereed proceedings).

Panitchpakdi, K. (2012). Analyzing sustainability of a local community by EBS Theory: The Case of Kao Yi Sarn, Samut Songkram, Thailand. *Journal of ASIAN Behavioural Studies (jABs)*, 2(4), 1-10.

Scott, L., Johnstone-Louis, M., Dolan, C., Sugden, K. and Wu, M.(2012a). Inequality and enterprise: A study of Avon in Africa, *Entrepreneurship Theory and Practice*, 36(3), 543-568.

Scott, L.(2012). The Double X Economy. In Green Templeton College, University of Oxford (Ed.), *The GTC Magazine*, Autumn, Issue 2, 10-12.

SDfA-Kenya.(2012). Sustainable Development for All-Kenya at Glance the Year 2011. Sustainable Development for All-Kenya SDfA-Kenya.

Smith, E. C. et al. (2007*). Design for the other 90%.* Cooper-Hewitt, National Design Museum.

Smith, E. C. et al. (2011). *Design with the other 90% Cities*. Cooper-Hewitt, National Design Museum.

Strunk, W., Jr., & White, E. B.(1979). *The Elements of Style*. (3rd ed.).New York: Macmillan, (Chapter 4).

Thompson, J. L. (2002). The world of the social entrepreneur, *International Journal of Public Sector Management*, 15(5), 412-431.

Van der Geer, J., Hanraads, J. A. J., & Lupton R. A.(2000). The art of writing a scientific article. *Journal of Scientific Communications*, 163, 51 - 59.